

**REMARKS**

The Office Action mailed February 21, 2007 has been carefully reviewed and the following remarks have been made in consequence thereof.

Claims 1-16 are pending in this application. Claims 1-12 stand rejected. Claims 13-16 are withdrawn from consideration as being directed to a non-elected invention.

The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over either Japanese Patent Reference No. 04325195 (hereinafter referred to as “Japan ‘195”) or Korean Patent Reference No. 2001098082 (hereinafter referred to as Korean ‘082) in view of either U. S. Patent No. 6,935,142 to Musser et al. (hereinafter referred to as “Musser”) or U.S. Patent No. 5,439,019 to Quandt et al. (hereinafter referred to as “Quandt”) is respectfully traversed. The rejection is treated as two different rejections below. Specifically, the rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Japan ‘195 in view of either Musser or Quandt is traversed first. The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Korean ‘082 in view of either Musser or Quandt is traversed second.

The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Japan ‘195 in view of either Musser or Quandt is respectfully traversed.

Japan ‘195 describes a controller (19) connected to a power switch (23), a water level sensor (22), a lid switch (24), a program selection switch (25), a start and stop switch (26) and a temperature sensor (35) that detects water supply temperature of a washing machine. A cold water supply and hot water supply supplying water at a temperature T2 is detected, and cold water supply and hot water supply valves are controlled such that a temperature T3 at setup water level L3 is within a determined fixed range.

Musser describes a washing machine (10) including a water level sensor (44) that may be positioned about a tub (16). Water level sensor (44) is operative to measure the level of water in tub (16). Water level sensor (44) is further operative to generate signals indicative of the water level in tub (16). The water level signals are provided to an ETC (54). In one

form, water level sensor (44) is a pressure activated device or switch mounted in a bottom of tub (16). In another form, water level sensor (44) is a water level detector mounted proximate an opening of tub (16). Water level sensor (44) also communicates with a processor (60) and provides signals to processor (60). The water level sensor signals indicate the level of the water in tub (16) to processor (60). However, processor (60) uses signals from water temperature sensor 42 to adjust the flow of water into tub (16).

Quandt describes a clothes washer (10) having a washtub (32), actuator control knobs (28a-28d) and a controller (36). Using the actuator control knobs (28a-28d), an operator inputs the desired water temperature for the wash and rinse operations to the controller (36). The controller (36) computes and stores averages for the cold water temperature ( $T_c$ ), the warm water temperature ( $T_w$ ) and the flow rate (FR) of water from a mixing valve (38) into washtub (32). The washtub (32) has a plurality of pressure sensors (56a-56e) disposed at various levels. Pressure sensor (56a) is positioned at the lowest level and provides an output indicating when water is filled to a 9.95 gallon level. The fill rate (FR) is calculated by determining the time required to fill the washtub to a level corresponding to a particular pressure sensor (56a-e), and then dividing the gallons required to fill the washtub to that particular level by the measured time to fill to that level. Pressure sensors (56a-e) may be used as a cross-correlation for the fill time (FT). For example, if the preselected level through control knob (28b) is for a medium wash load level (V) that corresponds to 15.65 gallons, and the level sensor (56c) also corresponds to 15.65 gallons, then theoretically the pressure sensor (56c) should provide an output signal at the completion of the fill time (FT). Controller (36) also uses timer (58) and pressure sensors (56a-56e) practically implemented as a multiposition pressure switch to determine a historical average of the flow rate (FR) into the washtub (32).

Applicant respectfully submits that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Japan '195, Musser and Quandt, considered alone or in combination, describes or suggests the claimed invention.

Further, in contrast to the Examiner's assertion within the Office Action, Applicant respectfully submits that it would not be obvious to one skilled in the art to combine Japan '195 with either Musser or Quandt because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant's own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP §2143.01. Rather, some suggestion to combine such references and a reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, or any reasonable expectation of success has been shown.

Further, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. It is also impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Because there is no teaching or suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for these reasons, Applicant requests that the Section 103 rejection of the claims be withdrawn.

If art "teaches away" from a claimed invention, such a teaching supports the nonobviousness of the invention. *U.S. v. Adams*, 148 USPQ 479 (1966); *Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited art, as a whole, is not suggestive of the presently claimed

invention. Moreover, Applicants respectfully submit that Musser teaches away from the temperature control and washing machine as recited in Claims 1 and 6, respectively. Specifically, Musser describes a pressure activated water level sensor/detector (44) that provides a signal or signals to a processor (60). However, the processor (60) uses the water temperature sensor signals to adjust the flow of water into the tub (16). Particularly, the processor uses the water temperature sensor(s) to determine the temperature of the water in the tub (16) and provides signal(s) to the cold water valve (34) and/or the hot water valve (32) depending on the temperature setting of a selector (53). By virtue of describing a pressure sensor and a temperature sensor in the same reference, and using the temperature sensor to adjust the flow of water into the tub (16) without a suggestion to otherwise use pressure sensor (44), Musser teaches against using the pressure sensor (44) in place of the temperature sensor. None of Japan '195, Musser and Quandt, considered alone or in combination, describe or teach a temperature control and washing machine as recited in Claims 1 and 6, respectively. Accordingly, for at least the reasons set forth above, Applicant respectfully requests that the rejections of Claims 1-12 under 35 U.S.C. 103(a) be withdrawn.

Claim 1 recites a temperature control for a washing machine, the washing machine including a tub, a hot water valve, and a cold water valve, said temperature control comprising "a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than the full fill level and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors, and said hot and cold water valves, said controller configured to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

None of Japan '195, Musser and Quandt, considered alone or in combination, describes or suggests a temperature control for a washing machine, as recited in Claim 1. More specifically, Japan '195, Musser and Quandt, considered alone or in combination, describes or suggests a washing machine including a first pressure sensor positioned to sense

a full fill level in the tub and configured to generate a full fill signal when the tub is full, and a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than the full fill level and corresponding to an adjustment level in the tub, the second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Japan '195 describes controlling cold water supply and hot water supply valves such that a temperature T3 at setup water level L3 is within a determined fixed range. Musser describes a pressure activated water level sensor (44) that provides a signal or signals to processor (60). However, processor (60) uses the water temperature sensor signals to adjust the flow of water into tub (16). Quandt describes a washtub having a plurality of sensors used to compute an average fill rate and using the plurality of sensors as a cross-correlation for the fill time.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Japan '195 in view of either Musser or Quandt.

Claims 2-5 depend from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicant submits that dependent Claims 2-5 likewise are patentable over Japan '195 in view of either Musser or Quandt.

Claim 6 recites a washing machine comprising "a tub; a cold water valve for controlling flow of cold water to said tub; a hot water valve for controlling flow of hot water to said tub; a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than full and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors and said hot and cold water valves, said controller operable to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

Japan '195, Musser and Quandt are described above.

None of Japan '195, Musser and Quandt considered alone or in combination, describes or suggests a washing machine, as recited in Claim 6. More specifically, none of Japan '195, Musser and Quandt considered alone or in combination, describes or suggests a washing machine including a first pressure sensor positioned to sense a full fill level in the tub and configured to generate a full fill signal when the tub is full, and a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than full and corresponding to an adjustment level in the tub, the second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Japan '195 describes controlling cold water supply and hot water supply valves such that a temperature T3 at setup water level L3 is within a determined fixed range. Musser describes a pressure activated water level sensor (44) that provides a signal or signals to processor (60). However, processor (60) uses the water temperature sensor signals to adjust the flow of water into tub (16). Quandt describes a washtub having a plurality of sensors used to compute an average fill rate and using the plurality of sensors as a cross-correlation for the fill time.

Further, Applicant respectfully traverses the Examiner's assertion that "to have the sensors provided with multiple trips points is considered to be an obvious extension of the teachings of Japanese Patent No. 04325195, Korean Patent No. 2001098082, Quandt or Musser." None of Japan '195, Musser and Quandt, alone or in combination, describes or suggests providing sensors with multiple trip points.

Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Japan '195 in view of either Musser or Quandt.

Claims 7-12 depend from independent Claim 6. When the recitations of Claims 7-12 are considered in combination with the recitations of Claim 6, Applicant submits that dependent Claims 7-12 likewise are patentable over Japan '195 in view of either Musser or Quandt.

The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Korean '082 in view of either Musser or Quandt is respectfully traversed.

Korean '082 describes a control unit that senses the temperature of a tub before starting to feed water by using a temperature sensor after the temperature and water level of washing water is set. The control unit feeds a specific amount of cold water through an opened cold water valve. The control unit calculates the feed amount of cold water per unit time after measuring the temperature of cold water with the temperature sensor. The control unit then decides the current season by comparing the detected temperature and pressure of cold water with a set value. If the detected temperature is lower than 5° C, the control unit determines the current season to be winter. If the temperature is between 5-15° C, the control unit determines the current season to be spring or fall. Otherwise, the control unit determines the current season to be summer. The control unit feeds a specific amount of cold and hot water through respective water valves. The control unit then detects the temperature of fed water and calculates the temperature of hot water by using the detected temperature of cold water. If the temperature of cold water is different from the fed cold or hot water, the control unit decides that the same amount and temperature of hot water is not fed. The control unit feeds cold water only without regard to temperature control routines. If hot water is fed, the control unit feeds water up to a slightly lower water level than the set level by controlling the two water valves. The control unit measures the temperature of water again and feeds water up to the set water level by controlling the valves according to a difference between the temperature of fed water and the set temperature.

Musser and Quandt are described above.

Applicant respectfully submits that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Korean '082, Musser and Quandt, considered alone or in combination, describes or suggests the claimed invention. Further, in contrast to the Examiner's assertion within the Office Action, Applicant respectfully submits that it would not be obvious to one skilled in the art to combine Korean '082 with either Musser or Quandt because there is no motivation to combine the references

suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant's own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levingood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP §2143.01. Rather, some suggestion to combine such reference and a reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, or any reasonable expectation of success has been shown.

Further, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. It is also impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Because there is no teaching or suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for these reasons, Applicant requests that the Section 103 rejection of the claims be withdrawn.

If art "teaches away" from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc., 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited art, as a whole, is not suggestive of the presently claimed invention. Moreover, Applicants respectfully submit that Musser teaches away from the temperature control and washing machine as recited in Claims 1 and 6, respectively. Specifically, Musser describes a pressure activated water level sensor/detector (44) that

provides a signal or signals to a processor (60). However, the processor (60) uses the water temperature sensor signals to adjust the flow of water into the tub (16). Particularly, the processor uses the water temperature sensor(s) to determine the temperature of the water in the tub (16) and provides signal(s) to the cold water valve (34) and/or the hot water valve (32) depending on the temperature setting of a selector (53). By virtue of describing a pressure sensor and a temperature sensor in the same reference, and using the temperature sensor to adjust the flow of water into the tub (16) without a suggestion to otherwise use pressure sensor (44), Musser teaches against using the pressure sensor (44) in place of the temperature sensor. None of Korean '082, Musser and Quandt, considered alone or in combination, describe or teach a temperature control and washing machine as recited in Claims 1 and 6, respectively. Accordingly, for at least the reasons set forth above, Applicant respectfully requests that the rejections of Claims 1-12 under 35 U.S.C. 103(a) be withdrawn.

Claim 1 recites a temperature control for a washing machine, the washing machine including a tub, a hot water valve, and a cold water valve, said temperature control comprising "a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than the full fill level and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors, and said hot and cold water valves, said controller configured to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

None of Korean '082, Musser and Quandt, considered alone or in combination, describes or suggests a temperature control for a washing machine, as recited in Claim 1. More specifically, none of Korean '082, Musser and Quandt, considered alone or in combination, describes or suggests a washing machine including a first pressure sensor positioned to sense a full fill level in the tub and configured to generate a full fill signal when the tub is full, and a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than the full fill level and corresponding to an adjustment level in

the tub, the second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Korean '082 merely describes a control unit that controls the operation of cold and hot water valves based on a detected temperature of fed water. Musser describes a pressure activated water level sensor (44) that provides signals to processor (60). However, processor 60 uses the water temperature sensor signals to adjust the flow of water into tub (16). Quandt describes a washtub having a plurality of sensors used to compute an average fill rate and using the plurality of sensors as a cross-correlation for the fill time.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Korean '082 in view of either Musser and Quandt.

Claims 2-5 depend from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicant submits that dependent Claims 2-5 likewise are patentable over Korean '082 in view of either Musser or Quandt.

Claim 6 recites a washing machine comprising "a tub; a cold water valve for controlling flow of cold water to said tub; a hot water valve for controlling flow of hot water to said tub; a first pressure sensor positioned to sense a full fill level in said tub and configured to generate a full fill signal when the tub is full; a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than full and corresponding to an adjustment level in said tub, said second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached; and a controller operatively coupled to said first and second pressure sensors and said hot and cold water valves, said controller operable to control said valves based on the fill signals from said pressure sensors to control a wash water temperature."

Korean '082, Musser and Quandt are described above.

None of Korean '082, Musser and Quandt, considered alone or in combination, describes or suggests a washing machine, as recited in Claim 6. More specifically, none of

Korean '082, Musser and Quandt, considered alone or in combination, describes or suggests a washing machine including a first pressure sensor positioned to sense a full fill level in the tub and configured to generate a full fill signal when the tub is full, and a second pressure sensor positioned to sense an intermediate fill level, the intermediate fill level less than full and corresponding to an adjustment level in the tub, the second pressure sensor configured to generate an intermediate fill signal when the intermediate fill level is reached, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Korean '082 merely describes a control unit that controls the operation of cold and hot water valves based on a detected temperature of fed water. Musser describes a pressure activated water level sensor (44) that provides signals to processor (60). However, processor (60) uses the water temperature sensor signals to adjust the flow of water into tub (16). Quandt describes a washtub having a plurality of sensors used to compute an average fill rate and using the plurality of sensors as a cross-correlation for the fill time.

Further, Applicant respectfully traverses the Examiner's assertion that "to have the sensors provided with multiple trips points is considered to be an obvious extension of the teachings of Japanese Patent No. 04325195, Korean Patent No. 2001098082, Quandt or Musser." None of Korean '082, Musser and Quandt, alone or in combination, describes or suggests providing sensors with multiple trip points.

Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Korean '082 in view of either Musser or Quandt.

Claims 7-12 depend from independent Claim 6. When the recitations of Claims 7-12 are considered in combination with the recitations of Claim 6, Applicant submits that dependent Claims 7-12 likewise are patentable over Korean '082 in view of either Musser or Quandt.

For at least the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 1-12 be withdrawn.

In view of the foregoing remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,

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